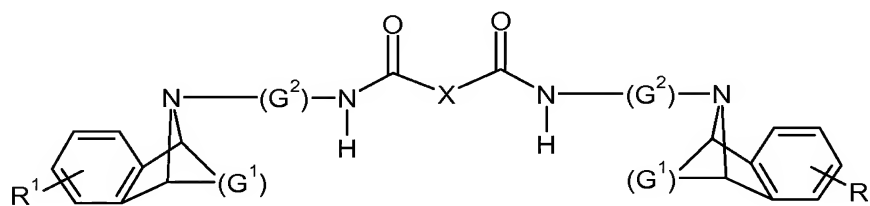


Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A compound of the formula ~~according to formula (I)~~ below, having the structure:



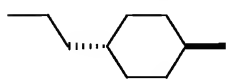
Formula (I)

wherein:

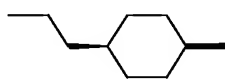
R^1 is selected from the group consisting of hydrogen, halogen, C_{1-4} alkyl, C_{1-4} alkanoyl and aroyl;

G^1 ~~represents~~ is CH_2-CH_2 or $CH=CH$;

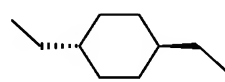
G^2 represents C_{4-7} alkyl or a group of the formula (a), (b) or (c):



(a)



(b)



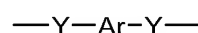
(c)

;

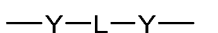
X represents a group of the formula (d), ~~(e)~~ or (f):



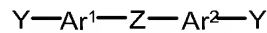
(d)



(d)



(e)



(f)

wherein

Y is, independently, selected from the group consisting of a bond, O, S, NR^2 , - NR^2 - C_{1-4} alkyl-, and C_{1-4} alkyl- each of these alkyl groups may contain a heteroatom selected from O, NR^2 , or S;

R^2 ~~represents a~~ is hydrogen, C_{1-4} alkyl or C_{1-4} alkyl-aryl;

~~Ar, Ar¹ and Ar² are, independently, is~~ selected from the group consisting of an optionally substituted phenyl rings, optionally substituted 5- or 6- membered aromatic heterocyclic rings or an optionally substituted, fused bicyclic or tricyclic aromatic or heteroaromatic ring systems;

~~L is, independently, selected from the group consisting of a bond, optionally substituted C₁₋₄ alkanoyl, C₁₋₄ alkenyl, C₁₋₄ alkynyl or C₁₋₁₈ alkyl which may contain between 0 and 3 heteroatoms independently selected from O, NR², or S; Also, atoms within L may be joined to form up to 3 rings and additionally L may be have up to 3 aryl, heteroaryl or CO₂R² substituents; Z represents a bond, O, NR², S, C₁₋₄ alkylidene or C₁₋₄ alkyl .~~

2. (currently amended) A compound according to claim 1 selected from the group consisting of:

N-{4-[2-(-(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl)-ethyl]-cyclohexyl}-2-[2-({4-[2-(-(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl)-ethyl]-cyclohexylcarbamoyl)-methyl)-phenyl]-acetamide;

2,2'-benzene-1,3-diylbis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)acetamide];

N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)-N'-{4-[(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)amino]carbonyl]amino)methyl]phenyl}urea;

N',N'''-(benzene-1,3-diyl)dimethanediylbis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];

~~N',N''' 1,2-propanediylbis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];~~

~~N',N''' 1,6-hexanediylbis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];~~

~~N',N''' [(methylimino)di 2,1-ethanediyl]bis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];~~

~~N',N''' 1,2-butanediylbis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];~~

~~N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)-N''-{15-[(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)amino]-15-oxo-4,7,10-trioxa-14-azapentadec-1-yl}urea;~~

~~N',N'''-1,4-butanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea];~~

~~N',N'''-(thiodi-2,1-ethanediyl)bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea];~~

~~N',N'''-1,2-ethanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea];~~

~~N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)-N'-[3-(((trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)amino)carbonyl)amino)-2,2-dimethylpropyl]urea;~~

~~N',N'''-1,2-cyclohexanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea];~~

~~2,2'-benzene-1,4-diylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]acetamide] trifluoroacetate;~~

~~2,2'-benzene-1,3-diylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]acetamide] trifluoroacetate;~~

~~N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)-N'-[[5-([2-([[(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)amino]carbonyl)amino)ethyl]thio)methyl)-2-furanyl)methyl]urea;~~

~~N',N'''-(2,3-naphthalenediyl)dimethanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea];~~

~~N',N'''-1,12-dodecanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea] trifluoroacetate;~~

~~N',N'''-[benzene-1,2-diylbis(oxy-2,1-ethanediyl)]bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea] trifluoroacetate;~~

~~N',N''' (benzene-1,3-diyl-di-2,1-ethanediyl)bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea]trifluoroacetate;~~

~~N',N''' (benzene-1,4-diyl-di-2,1-ethanediyl)bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea]trifluoroacetate;~~

~~N',N''' (1,3-cyclohexanediyldimethanediyl)bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea]trifluoroacetate;~~

~~N',N''' 1,11-undecanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea]trifluoroacetate;~~

~~N',N''' 1,10-decanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea]trifluoroacetate;~~

~~N',N''' 1,8-octanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea]trifluoroacetate;~~

~~N',N''' [1,1'-bi(cyclohexyl)-4,4'-diylbis(oxy-2,1-ethanediyl)]bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];~~

~~N',N''' (dithiodi-3,1-propanediyl)bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea]trifluoroacetate and pharmaceutically acceptable salts thereof.~~

3. (Cancelled)

4. (Currently amended) A pharmaceutical composition ~~for the treatment of muscarinic acetylcholine receptor mediated diseases~~ comprising a compound according to claim 1 and a pharmaceutically acceptable carrier thereof.

5. (Cancelled)

6. (Currently amended) A method of treating a muscarinic acetylcholine receptor mediated disease selected from the group consisting of chronic obstructive lung disease, chronic bronchitis, asthma, chronic respiratory obstruction, pulmonary fibrosis, pulmonary emphysema and allergic rhinitis ,~~wherein acetylcholine binds to~~

~~said receptor~~, comprising administering ~~a safe and~~ an effective amount of a compound according to claim 1.

7. (Cancelled)

8. (Currently amended) A method according to claim ~~7~~ 6 wherein administration is via inhalation via the mouth or nose.

9. (previously presented) A method according to claim 8 wherein administration is via a medicament dispenser selected from a reservoir dry powder inhaler, a multi-dose dry powder inhaler or a metered dose inhaler.

10. (currently amended) A method according to claim 9 wherein the compound is administered to a human ~~and has a duration of action of 12 hours or more for a 1 mg dose.~~

11. (currently amended) A method according to claim 10 wherein the compound has a duration of action of ~~24~~ 12 hours or more.

12. (cancelled)

13. (new) A compound according to Claim 1 wherein G₂ is of formula (a).

14. (new) A compound according Claim 1 wherein Ar is phenyl.

15. (new) A compound according to Claim 14 wherein Y is independently a C₁₋₄ alkyl.

16. (new) A compound according to Claim 15 wherein G¹ is CH=CH.

17. (new) A compound according to Claim 1 wherein G¹ is CH=CH.

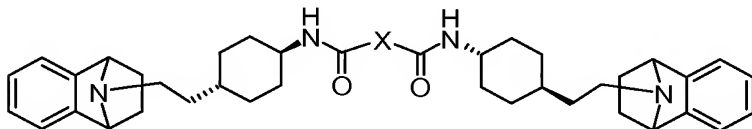
18. (new) A compound according to Claim 1 wherein Ar is furyl, thienyl, pyrrolyl, oxazolyl, thiazolyl, imidazolyl, oxadiazolyl, thiadiazolyl, pyridyl, triazolyl, triazinyl, pyridazyl, pyrimidinyl, pyrazolyl, isothiazolyl, or isoxazolyl.

19. (new) A compound according to Claim 17 wherein Ar is furyl, thienyl, pyrrolyl, oxazolyl, thiazolyl, imidazolyl, oxadiazolyl, thiadiazolyl, pyridyl, triazolyl, triazinyl, pyridazyl, pyrimidinyl, pyrazolyl, isothiazolyl, or isoxazolyl.

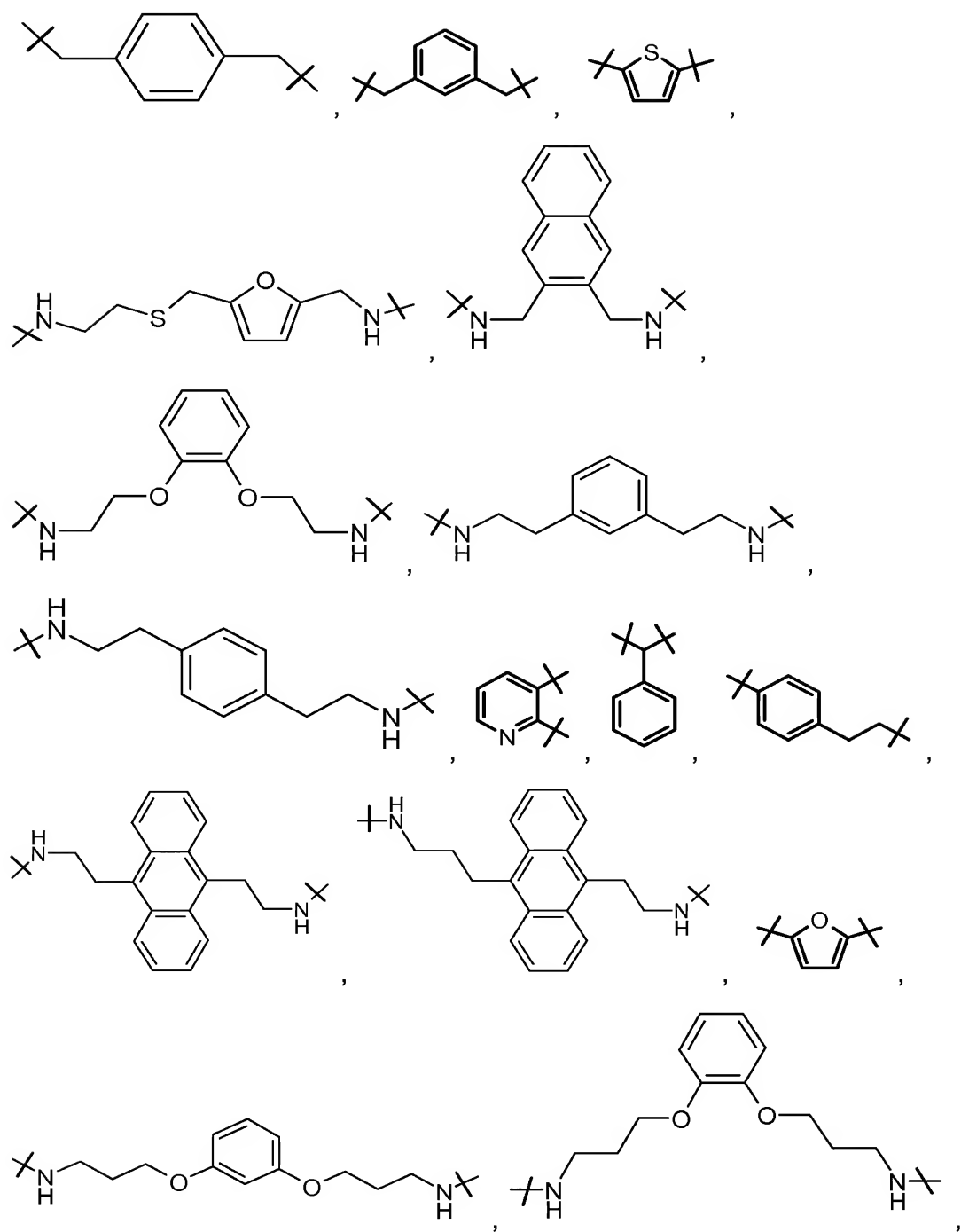
20. (new) A compound according to Claim 1 wherein Ar is naphthyl, indazolyl, indolyl, benzofuranyl, benzothienyl, benzothiazolyl, benzimidazolyl, benzoxazolyl, benzisoxazolyl, benzisothiazolyl, quinoliny, quinoxoliny, quinazoliny, cinnoliny, isoquinoliny, pyrazolo[1,5-a]pyrimidyl, pyrrolo[3,2-b]pyridyl, pyrrolo[3,2-c]pyridyl, thieno[3,2-b]thiophenyl, 1,2-dihydro-2-oxo-quinoliny, 3,4-dihydro-3-oxo-2*H*-benzoxazinyl, or 1,2-dihydro-2-oxo-3*H*-indolyl.

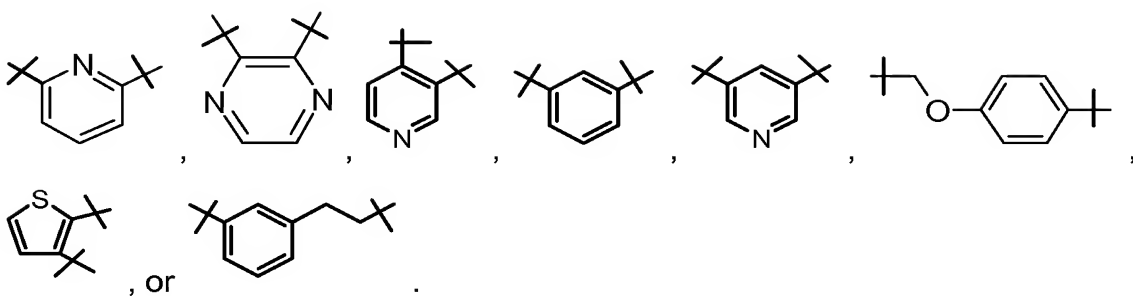
21. (new) A compound according to Claim 17 wherein Ar is naphthyl, indazolyl, indolyl, benzofuranyl, benzothienyl, benzothiazolyl, benzimidazolyl, benzoxazolyl, benzisoxazolyl, benzisothiazolyl, quinoliny, quinoxoliny, quinazoliny, cinnoliny, isoquinoliny, pyrazolo[1,5-a]pyrimidyl, pyrrolo[3,2-b]pyridyl, pyrrolo[3,2-c]pyridyl, thieno[3,2-b]thiophenyl, 1,2-dihydro-2-oxo-quinoliny, 3,4-dihydro-3-oxo-2*H*-benzoxazinyl, or 1,2-dihydro-2-oxo-3*H*-indolyl.

22.(new) A compound of the formula:



wherein X is selected from





23. A pharmaceutical composition comprising a compound according to Claim 22 and a pharmaceutically acceptable carrier.